ABSTRACT

A fuel injector nozzle assembly includes an injector body including a valve seat with a supply passage through which fuel flows generally along a supply axis. The valve seat presents an upper surface which is adapted to engage a valve to seal the supply passage. A nozzle plate is mounted onto the valve seat and includes a plurality of orifice holes therein through which fuel flows. The valve seat further includes a first edge protrusion protruding into the fuel flow for generating a first separation of the fuel flow, thereby creating a plurality of small eddies which are entrained within the fuel flowing adjacent thereto. A turbulence cavity is defined by the nozzle plate and the valve seat wherein fuel flows into the turbulence cavity through the supply passage and out from the turbulence cavity through the plurality of orifice holes.